IN THE CLAIMS

1.-7. (canceled)

8. (previously presented) A method for use by an Implantable Medical Device (IMD) of filtering an analog cardiac electrogram (EGM) signal having a predetermined frequency bandwidth, the method comprising:

obtaining an analog cardiac electrogram (EGM) signal from an implantable sensor coupled to the IMD;

filtering the EGM signal with a high pass filter (HPF) having a cut-off frequency within a predetermined frequency bandwidth, and wherein a low-frequency band portion of the predetermined frequency bandwidth is attenuated in the filtered EGM signal;

sampling and digitizing the filtered EGM signal as a digital data set in a time order to generate a compressed digital data set having at least a 2:1 data compression factor;

filtering the compressed data set in reverse time order employing a digital Infinite Impulse Response (IIR) filter having characteristics substantially matching the cut-off frequency and filter characteristics of the HPF to substantially remove distortions of the filtered analog EGM signal introduced by the HPF; and

analyzing the filtered compressed data set to determine whether cardiac ischemia is present.

9. (previously presented) The method of Claim 8, wherein the method is implemented using programmed instructions.

10. (original) The method of Claim 9, wherein the programmed instructions are executed on a processing circuit included within the IMD.

11. (original) The method of Claim 9, wherein the programmed instructions are executed on a processing circuit located external to the IMD.

12. (previously presented) The method of Claim 8, wherein the EGM signal is generated using at least one of: an endocardial electrode, an epicardial electrode, a subcutaneously implanted electrode, an electrode mechanically coupled to a portion of a housing for the IMD.

13. (currently amended) The method of Claim 8, further comprising the step of storing the reverse time order filtered digital data set in a memory structure of the IMD.

14. (original) The method of Claim 8, further comprising the steps of:
storing the digital data set in memory of the IMD; and
uplink telemetry transmitting the stored digital data set to an external medical device (EMD); and
wherein the reverse time order filtering step of filtering the digital data set in reverse time order employing a digital IIR filter having characteristics substantially matching the cut-off frequency and filter characteristics of the HPF is conducted by the EMD.

15. (previously presented) Apparatus for use by an Implantable Medical Device (IMD) for filtering a physiological signal having a predetermined frequency bandwidth, the method comprising:

a sensor coupled to the IMD for sensing an analog cardiac electrogram (EGM) signal;

a high pass filter (HPF) for filtering the analog EGM signal, the HPF having a the cut-off frequency within the predetermined frequency bandwidth, wherein a low-band portion of the predetermined frequency bandwidth is attenuated in the filtered analog EGM signal;

means for sampling and digitizing the filtered analog EGM signal as a digital data set in a real time order;

means for compressing the digital data set via a lossy data compression technique wherein said lossy data compression technique comprises a peak preserving compression algorithm providing at least a 2:1 data compression;

a digital Infinite Impulse Response (IIR) filter having characteristics substantially matching the cut-off frequency and filter characteristics of the HPF for reverse time order filtering the compressed digital data set to substantially remove distortions of the filtered analog physiologic signal introduced by the HPF; and

means for comparing the compressed digital data set to one of a non-ischemic EGM template and a prior non-ischemic EGM of a patient and for one of triggering storage of at least a portion of a cardiac PQRST complex in the event that the comparison reveals the presence of an cardiac ischemic event and transmitting via telemetry at least a portion of the cardiac PQRST complex to an external receiving device.

16. (original) he apparatus of Claim 15, wherein the filtering of the stream of samples with the IIR filter is implemented using programmed instructions.

17. (original) The apparatus of Claim 16, wherein the programmed instructions are executed on a processing circuit included within the IMD.

18. (original) The apparatus of Claim 16, wherein the programmed instructions are executed on a processing circuit located external to the IMD.

19. (previously presented) The apparatus of Claim 15, wherein the EGM signal is generated by at least one of: an endocardial electrode, an

epicardial electrode, a subcutaneously implanted electrode, an electrode mechanically coupled to a portion of a housing for the IMD.

20. (original) The apparatus of Claim 15, further comprising means for storing the reverse time order filtered digital data set in memory of the IMD.

21. (original) The apparatus of Claim 15, further comprising:

means for storing the compressed digital data set in memory of the IMD; and

means for uplink telemetry transmitting the stored compressed digital data set to an external medical device (EMD); and wherein:

the digital IIR filter having characteristics substantially matching the cut-off frequency and filter characteristics of the HPF is within the EMD; and

the EMD further comprises means for receiving the uplink telemetry transmitted compressed digital data set and applying the received compressed digital data set to the digital IIR filter in reverse time order.

22. (previously presented) Apparatus for use by an Implantable Medical Device (IMD) for filtering a physiological signal having a predetermined frequency bandwidth, the method comprising:

a sensor coupled to the IMD for sensing an analog cardiac electrogram (EGM) signal;

a high pass filter (HPF) for filtering the analog ETM signal, the HPF having a the cut-off frequency within the predetermined frequency bandwidth, wherein a low-band portion of the predetermined frequency bandwidth is attenuated in the filtered analog EGM signal;

means for sampling and digitizing the filtered EGM signal as a digital data set in a real time order;

a digital Infinite Impulse Response (IIR) filter having characteristics substantially matching the cut-off frequency and filter characteristics of the HPF

for reverse time order filtering the digital data set to substantially remove distortions of the filtered analog EGM signal introduced by the HPF; and

means for comparing the compressed digital data set to one of a non-ischemic EGM template and a prior non-ischemic EGM of a patient and for triggering storage of at least a portion of a cardiac PQRST complex in the event that the comparison reveals the presence of an cardiac ischemic event.

23. (original) The apparatus of Claim 22, wherein the filtering of the stream of samples with the IIR filter is implemented using programmed instructions.

24. (original) The apparatus of Claim 23, wherein the programmed instructions are executed on a processing circuit included within the IMD.

25. (original) The apparatus of Claim 23, wherein the programmed instructions are executed on a processing circuit located external to the IMD.

26. (previously presented) The apparatus of Claim 22, wherein the physiologic signal is generated by at least one of: an endocardial electrode, an epicardial electrode, a subcutaneously implanted electrode, an electrode mechanically coupled to a portion of a housing for the IMD.

27. (original) The apparatus of Claim 22, further comprising means for storing the reverse time order filtered digital data set in memory of the IMD.

28. (original) The apparatus of Claim 22, further comprising:

means for storing the digital data set in memory of the IMD; and

means for uplink telemetry transmitting the stored digital data set to an external medical device (EMD); and wherein:

the digital IIR filter having characteristics substantially matching the cut-off frequency and filter characteristics of the HPF is within the EMD; and

the EMD further comprises means for receiving the uplink telemetry transmitted digital data set and applying the received digital data set to the digital IIR filter in reverse time order.